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(54) SAFETY CIRCUIT FOR ELECTRIC HEATING EQUIPMENT

(57) Abstract:

PURPOSE: To enhance safety by providing two independent temperature detecting circuits which are so constituted as not to be mutually affected.

CONSTITUTION: A device is equipped with a first temperature detecting circuit 1 which detects the temperature of a heating wire 11 based on the terminal voltage of a heat sensing wire 12, and with a second temperature detecting circuit 2 which detects the temperature of the heating wire 11 based on current flowing in the heat sensing wire 12 through a current transformer CT. Since the input impedance of the circuit 1 is set in advance greater than that of the heating wire even if the impedance of the first temperature detecting circuit fluctuates because of the failure of the circuit 1, current flowing in the current transformer CT is not affected, current can thereby be cut off based on the output of the temperature detecting circuit 2 in case of an abnormal condition. In addition, even if the temperature detecting circuit 2 fails while its input impedance fluctuates, the current fluctuation of the primary circuit of the

current transformer CT is negligible, the detected voltage of the temperature detecting circuit 1 is not thereby affected because the heating wire is connected to the temperature detecting circuit 1 via the current transformer CT, current can be therefore cut off based on the output of the temperature detecting circuit 1 in case of an abnormal condition.

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